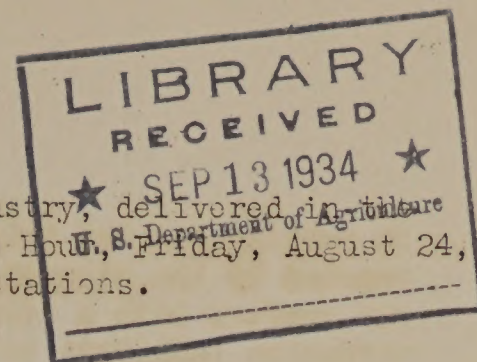


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PEAR BLIGHT



A radio talk by M. B. Waite, Bureau of Plant Industry, Department of Agriculture period, National Farm and Home Hour, Friday, August 24, 1934, broadcast by a network of 50 associate NBC radio stations.

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Those of you who have pears, apples, crabapples, and quinces in your gardens and orchards have probably been surprised at times in the summer to find whole branches suddenly dying, with the browned leaves hanging on -- without any apparent cause. Perhaps the most healthy and vigorous trees are the most attacked. The death of the branches in this group of fruits is almost universally caused by a bacterial disease known as pear blight, sometimes designated as fire blight, because it resembles the sudden killing by fire. To most people this is a mysterious disease, because there is no visible evidence of insect pests or fungous disease. Until bacterial diseases began to be understood a few decades ago, this malady was a puzzle to the wisest scientists. But now this disease, caused by a tiny bacillus --- scarcely 1/20,000 of an inch long and 1/35,000 of an inch wide--- is well understood. These bacteria attack the blossom clusters, fruit spurs, twig tips, and even the branches, bodies, and collars of the trees, killing as far as the mass of germs extends. The leaves mostly die as the result of the killing of the bark and cambium (or growth layer), and to some extent of the wood itself. Certain branches are often girdled by the blight extending around at some lower point; and one of the worst types of blight attacks the bodies and collars of the trees,, so that a whole tree may be girdled by a small blighted area.

To the careful observer there is some evidence of the cause of pear blight to the unaided eye. Pears and apples do not gum when wounded, like peaches and plums; but this germ disease produces a gummy exudate, which can often be found, until the rain has washed it away. This gummy exudate is swarming with germs, and is the active virus of the disease. It is carried by bees and other insects and distributed from flower to flower, and tree to tree, and is punctured into the twig tips and even into the bark. Even birds have been found to carry it; and thus it may be transported to distant orchards.

This is a native disease of our American wild crabapples and hawthorns, but attacks the more vigorous cultivated pears and apples much more seriously than it does its native hosts. It is only the tendency of this disease to stop as it advances down the twigs that saves our pear and apple orchards from extermination. There is a natural resistance of the twigs and bark to the progress of the disease which usually results in its stopping, at least when the twig matures. Certain cases live over in the thickened bark of the twigs and branches, keeping alive until autumn. Such cases survive the winter, and constitute the hold-over blight which starts the disease the following spring. Pear blight occurs in outbreaks which usually subside after 2 or 3 years. It sometimes nearly disappears in whole neighborhoods for several years.

Those of you who have blight in your pears and apples will be more interested in the treatment or control methods than in detailed discussion of the cause and behavior of the blight. Spraying has not been fully successful, except sometimes in the control of the insect carriers. The principal treatment consists in what is practically a refined type of tree surgery. The treatment consists

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in cutting out the twigs or branches, if possible, well below the lowest point reached by the disease, and then disinfecting the knife or saw and the exposed cut surface with a strong germicide before the next cut is made. 1-to-1000 corrosive sublimate solution is one of the handiest things to use, but in the use of this well known poison proper caution should always be observed. You should make it up in a glass bottle, preferably a pint bottle, with one tablet added to the water when wanted; poured out on a sponge or cloth swab preferably tied to a string and attached to the clothing. Any solution not used during the operations should be poured on the ground before returning to the house. The bottle itself should always be labeled "Poison."

In many cases shield-shaped scars are found, and sometimes long strips running down the branches, or even the trunks of the trees. To cut off the whole branch in such cases would be a needless sacrifice, but by skilful work and disinfection of the wounds, the tree or branch can usually be saved. Be sure to cut out the last traces of diseased bark; surface-disinfect the wound; then paint the exposed wood with coal tar thinned with refined creosote oil. This tar-creosote is a disinfectant and will waterproof the exposed wood and prevent the entrance to wood rots.

Eradicating pear blight may be carried on during the summer as well as during the dormant season. By far the best results are obtained when growth has stopped in late summer and autumn, and dry, sunny weather is the best time to work. Cutting out the hold-over in the autumn, or at any time in the winter, is the best way of preventing next year's blight. On young trees it is good practice, however, to begin to cut in May or June, as soon as the blight shows up.

There are certain supplemental things that greatly help in the control of pear blight. One is the use of resistant varieties of apples and pears, and resistant stocks for certain kinds, like Grimes Golden apples; moderation in cultivation manuring and fertilizing; moderation in pruning; and cutting off fruit spurs and sprouts from the base of the critical main branches.

It is often desirable to plant rapidly growing cover crops in June, such as cowpeas, sorghum, or Sudan grass, or even to cease cultivation and let the weeds grow, so as to tend to check the tree growth and thus the blight. It is even desirable to seed an orchard down to grass and let it remain in sod for a few years until the wave or outbreak of pear blight has passed over. Unfortunately, when an outbreak of blight does come, one must reduce or abandon good horticultural practices.

Most of the facts about pear blight that I have given you except discovery of the cause were worked out many years ago in the Bureau of Plant Industry, and the publications are out of print, but you can obtain a mimeographed sheet giving condensed information and directions by writing the U. S. Department of Agriculture.